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Valuation and Classification of Company Issued Cash and Share-Puts

William D. Terando
Butler University, bterando@butler.edu

Wayne Shaw

David Smith

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William D. Terando[1]

Wayne H. Shaw[2]

David B. Smith[3]

(1) Iowa State University, Ames, IA, USA

(2) Southern Methodist University, Dallas, TX, USA

(3) University of Nebraska at Lincoln, Lincoln, NE, USA

Abstract

This paper examines whether investors' valuations of cash and share-put warrants are influenced by their potential differential effect on firm solvency. It is motivated by the enactment of SFAS 150, which requires that all contingent put warrant obligations be classified as balance sheet liabilities regardless of put type. Consistent with the critics of SFAS150, we show that market participants differentially value cash and share-puts based on their solvency characteristics beyond the firm's recorded assets and liabilities. Our results add to existing capital structure literature by suggesting that complex financial instruments (such as cash and share-puts) be reported separately from each other on a firm's balance sheet.

1 Introduction

This paper examines whether investors' valuations of put warrants ("puts") that contain cash-only settlement terms ("cash-puts") and those that also allow for share-settlement ("share-puts") are consistent with the same balance sheet classification. The alternative that we investigate is whether those valuations are influenced by the potential differential affect that each put type has on firm solvency. Findings supporting this alternative imply that it might be misleading to investors to group both financial instruments together on the balance sheet. This study is motivated by a change in accounting rule enacted as a part of Statement of Financial Accounting Concepts No. 150 ("SFAS 150") *Accounting for Certain Financial Instruments with Characteristics of Both Liabilities and Equity* that requires issuers to characterize both cash and share-puts as balance sheet liabilities (FASB *2003a*). Under the prior rules, both the International Accounting Standards Board (IASB) and Financial Accounting Standards Board (FASB) characterized cash-puts as liabilities and share-puts as equity. This prior characterization allowed share-put issuers to avoid balance sheet classification of the contingent put obligation due to its potential differential effect on firm solvency and equity value.

The new classification scheme is consistent with the expanded definition of what constitutes a liability recommended by the FASB in the Exposure Draft entitled *Proposed Amendment to FASB Concepts Statement No. 6 to Revise the Definition of Liabilities* ("*PSFAC 6*") (FASB *2001*). It is based on the belief that financial instruments that allow for share-settlement establish relationships that have little, if anything, in common with ownership interests since the instrument holder cannot benefit from increases or suffer from decreases in the fair value of common equity. Rather, they are considered to be similar in nature to cash-based obligations because both establish a debtor-creditor relationship between issuer and holder. Penman (*2003*) identifies the need for this change in classification and indicates that the previous classification criteria follow an entity view of the firm by focusing on the impact that cash-based obligations have on a firm's own assets. He favors a proprietorship view that classifies share-settled obligations as liabilities because they may also impose a cost in the form of a transfer of shareholder wealth from equity-holders to third parties.

Critics of the change in classification of share-puts to liabilities, such as the American Accounting Association's Financial Accounting Standard's Committee (AAA Committee), argue that the new standard's classification criteria creates a narrow definition of equity and a broad (and meaningless) definition of liabilities by requiring financial instruments that contain heterogeneous characteristics (such as cash and share-puts) to be classified as an undifferentiated set of liabilities. The AAA Committee expresses concern that this may make financial statements less rather than more relevant to users and hamper key decisions, particularly the assessment of solvency and estimation of equity value (AAAFAS *2001*, p. 3). They recommend that obligations that restrict settlement to a firm's assets (such as cash-puts) be disclosed separately from obligations that also allow for settlement with a firm's own common equity (such as share-puts), either as subdivisions of liabilities and or through the creation of a well-defined mezzanine category in addition to liabilities and equity in rank order based on their differential effect on firm solvency (AAAFAS *2001*, p. 4). In response to these and other concerns raised by critics of SFAS 150, the FASB recently announced its intention to reconsider the appropriate balance sheet classification of

multiple component financial instruments (such as put warrants) in the second Milestone Draft to SFAS 150. The willingness of the FASB to further address and reconsider the prior decisions reached in SFAS 150 indicates a continuing uncertainty within the accounting profession as to the proper accounting treatment of these financial instruments.

We provide insight into this controversy by examining whether market participants value cash and share-puts as heterogeneous financial instruments based on their potential differential effect on firm solvency and equity valuation. Our sample consists of 156 firm-year observations for 52 firms that issued puts and have conditional put obligations outstanding at year-end between 1991 and 2003. Restricting our sample to the pre-SFAS 150-time-period allows us to examine whether solvency considerations differentially influenced investor valuation of put types without also having to consider the impact of the change in accounting rules. We conduct between-firm tests to investigate differences in characteristics of firms that issue cash or share puts. We also conduct fixed-effects regression tests to examine whether investors differentially value cash and share-puts beyond the firm's recorded assets and liabilities. If investors believe that the cash and share-puts are distinct financial instruments based on their potential differential impact of firm solvency, we expect that they will value as cash-puts similar to other liabilities (negatively) but share-puts similar to financial instruments that have the potential to positively impact firm value.

Our results show that share-put issuers have larger share repurchase and put programs than cash-put issuers. The net-share settlement feature allows these firms to increase put sales by providing them payment flexibility in the event operating cash flows are not sufficient to meet future put obligations. This allows issuers to reduce the average cost of their current-year share repurchases by an average of 7.4% (as compared to an average reduction of 3.9% for cash-put firms). Consistent with the critics of SFAS 150, we find that market participants' value cash and share-puts differentially beyond the firm's recorded assets and liabilities. Cash-puts are valued similarly to other liabilities (negatively) that require payment out of a firm's own assets, while share-puts are valued as financing instruments that have a potential positive impact on a firm solvency regardless of whether they are exercised by put-holders or allowed to expire. We also show that this result is due to solvency considerations rather than the accounting rule differences between cash and share-puts. Our paper contributes to the capital structure literature (e.g. Warner *1977*; Myers *1977*) by showing that solvency considerations are important factors in the valuation of alternative put-types. Our results suggest that complex financing instruments (such as cash and share-puts) be reported separately from each other on a firm's balance sheet, consistent with the AAA Committee position.

The remainder of the paper is divided into six additional sections. Section 2 discusses the institutional features of put warrants and their impact on firm solvency and equity holdings. The hypothesis is developed in Sect. 3 while the sample selection process is discussed in Sect. 4. Section 5 presents the research design while the results of our statistical tests are presented in Sect. 6. Our conclusion is provided in Sect. 7.

2 Put warrants: firm solvency and equity holdings

Companies began selling puts to third parties in 1991 following a Securities and Exchange Commission ("SEC") ruling in favor of a Chicago Board of Options Exchange request to allow such sales. Puts provide investors ("put-holders") the right to require the issuer to purchase their own common equity at a pre-defined price ("strike price") and date ("settlement date"). In return, the issuer receives an up-front tax-free cash premium. Put contracts may be settled using a variety of methods usually at the option of the issuer. The alternative settlement methods include:

- Physical delivery: The company purchases its own stock from the put-holder for cash in an amount equal to the put strike price.
- Net-cash: The company pays to the put-holder cash in an amount equal to the loss realized on the put contract. No shares are exchanged.
- Net-share: The company pays to the put-holder its own stock with a fair value equal to the loss realized on the put contract.

In the past, firms have issued two different put types: cash and share-puts. Cash puts require the issuer to settle the put obligation by transferring their own assets (using physical delivery or net-cash) while "share-puts" also permit issuers (at their choice) to use the net-share method to settle the put contract. The resulting effect of put issuance on firm solvency and common equity holdings is demonstrated by the following example. As shown in Exhibit 1, the impact is dependent upon the initial put sale proceeds received (A), the relationship between the fair value of the underlying common equity (FMV) and put strike price (S), and, finally, if and how the puts are settled. Case I describes the situation where the puts are "out-of-the money" at the settlement date because the fair value of common equity exceeds the put strike price (FMV > S). In this instance, the put-holders "lose" because they are better off by allowing the puts to expire. This allows the firm to experience an incremental increase in solvency equal to the put sales proceeds received (+A). Cases II–IV assume that the puts are "in-the-money" at the settlement date. In this instance, the firm incurs an incremental loss on put issuance because they are required to purchase their own common equity from put-holders at the higher put strike price (rather than lower common equity FMV, or S-FMV). The impact on firm solvency and equity holdings depends on how the put obligation is settled. Case II assumes the "physical delivery" method is utilized. Firm solvency is reduced in an amount equal to the difference between cash paid for the stock and the put sales proceeds received, or −S + A. Equity holdings, however, increase by the shares repurchased (+C). Case III assumes the firm settles the put contract using the "net-cash" method. In this instance, the firm pays the put-holder cash in an amount equal to the incremental loss realized on the put transaction (LOSSCASH). After considering the put sales proceeds received, the incremental effect to firm solvency is negative in an amount equal to −LOSSCASH + A. There is no incremental impact to equity holdings since no shares are exchanged between the issuer and put-holder. Finally, Case IV assumes the firm uses the "net-share" method to settle the put contract. Similar to the net-cash method, the issuer does not repurchase their common equity from the put-holder. Rather, they issue their common equity to put-holders with a fair value equal to the incremental loss realized on the put contract. Consequently, the resulting dilution in equity holdings is equal to the number of common shares issued to put-holders (-LOSSSTOCK). Similar

to Case I, firm solvency increases incrementally in an amount equal to the put sales proceeds received (+A).

Exhibit 1

Summary of the economic effect of issuing put warrants[a]

	Condition	Solvency effect	Equity effect
Case I	FMV > S	+A	None
Case II	FMV < S	−S+A	+C
Case III	FMV < S	−LOSSCASH+A	None
Case IV	FMV < S	+A	−LOSSSTOCK

[a]The purpose of this table is to summarize the effect of put issuance on firm solvency (solvency effect) and common equity holdings (equity effect)

Variable definitions: FMV equals the fair market value of the firm's common equity. S equals the put strike price. A equals the cash proceeds received when the puts are sold. C represents the common shares repurchased by the firm (assuming physical delivery). LOSSCASH represents the cash paid to put-holders assuming the put contract is settled using the net-cash option. LOSSSTOCK represents the common shares issued to put-holders assuming the put contract is settled using the net-share settlement option

3 Hypothesis

The new classification scheme under SFAS 150 requiring balance sheet classification of contingent put obligations regardless of put type is based on the belief that certain share-settled obligations (such as share-puts) establish relationships that have little, if anything, in common with ownership interests since the instrument holder receives a variable number of shares and cannot benefit from increases or suffer from decreases in the fair value of common equity. Rather, they are considered to be similar in nature to cash-based obligations (such as cash-puts) because both establish a debtor-creditor relationship between issuer and holder based on the potential dilution of stockholder wealth through the transfer of a variable number of equity shares to third parties in settlement of the put obligation.

This view contrasts with current capital structure theory that has primarily taken a solvency perspective towards defining debt, based on two characteristics possessed by most debt instruments: a future claim on firm assets and legal enforceability. The first characteristic is articulated in Statement of Financial Accounting Concepts No. 6 ("SFAC 6") *Elements of Financial Statements* which defines a liability as (FASB *1985*, p. 18): "probable future sacrifices of future economic benefits arising from present obligations of a particular entity to transfer assets or provide services to other entities in the future as a result of past transactions or events." The second characteristic of legal enforceability is advanced by Cheng et al. (*2003*) who state that page

22): “financial theory suggests that a primary characteristic of debt is that creditors have the option to force a delinquent debtor into bankruptcy.” These complimentary views suggest that investors are likely to value cash and share-puts based on their potential differential effects on firm solvency. Cash-puts are likely to be viewed as liabilities because they negatively impact firm solvency and put-holders can force a delinquent issuer into bankruptcy for non-payment of the cash obligation. In contrast, share-puts will not be valued as equivalent financial instruments because they have the potential to positively affect firm solvency and creditors cannot force a delinquent issuer into bankruptcy (due to the availability of the net-share settlement method to the issuer). Whether the market assesses cash and share-puts as heterogeneous or homogeneous financial instruments based on their potential differential effect of firm solvency and equity valuation is an empirical issue. We test the validity of these contrasting positions by examining the following hypothesis (stated in the alternative form)

H1A:

The market values both cash and share-puts based on their differential effects on a firm’s solvency in the Pre-FAS 150 period.

The null hypothesis is that the market values both cash and share-puts similarly (as liabilities) due to their establishment of a “debtor-creditor” relationship between issuer and put-holder and the contingent loss faced by the firm and its shareholders, either in terms of firm solvency or shareholder dilution.

4 Sample selection

Our sample consists of U.S. corporations that had outstanding contingent put obligations at year-end between 1991 and 2003. We utilize the pre-SFAS 150 time period because it allows us to examine the impact, if any, of solvency considerations on an investor’s valuation of put types without also having to consider the effect of the change in accounting rules. Table 1 outlines our sample selection procedure. Using the NAARS and MERGENT databases, we identify 174 firm-year observations of put issuances in the time period under consideration. We eliminated six firm-year observations that issued puts during the year but did not have contingent put obligations outstanding at year-end (either because the puts expired or were settled by the firm prior to the financial statement date). We also eliminated 12 firm-year observations with insufficient financial statement and/or price data to compute our test variables. This selection criterion yields a sample of 156 firm-year observations for 52 firms. The sample represents an unbalanced panel since each firm has observations in different years and for a varying number of years. Firms issued puts on average for 3.2 years. Fifteen firms issued puts for only one year, while thirty-seven firms issued puts in multiple years, ranging from two to nine years. Most firms issued either cash or share-puts over the life of their put programs. However, five firms began their put program by issuing cash-puts in the early years of their put program and then switched to share-puts in its latter years, while two other firms began their put programs by issuing share-puts and then switched to cash-puts. Consequently, 74 firm-year observations consist of firms with contingent cash-put obligations (cash-put firms) while 82 firm-year observations represent firms with contingent share put obligations (share-put firms).

Table 1

Sample selection method

	Firm-Years	Percentage
Initial Sample[a]	174	100.00
Less: Firm-years with no puts outstanding at year-end[b]	−6	−3.45
Less: Firm-years with insufficient financial/price data[c]	−12	−6.90
Full Sample	156	89.65

[a]We use the MERGENT and NAARS database to identify firms that issued put warrants between 1991 and 2003. Of the 156 firm-year observations, 74 relate to cash-put issuances (cash-put firms) and 82 relate to share-put issuances (share-put firms)

[b]Six firm-year observations were eliminated because the firm's put warrants were not outstanding as of their year-end financial statement date

[c]Twelve firm-year observations were eliminated because they did not have sufficient financial statement or price data to compute our test statistics

As shown in Table 2, Panel A, prior to 1996 (and the enactment of IAS 32) the utilization of put warrants as a financing instrument was primarily limited to cash-put firms (15 of 17 firm-year observations, or 88.2%). Put warrant usage increased dramatically during the 1996–2003 time period with the relative percentage of share-put firm-year observations comprising slightly over half of the total firm-year observations for this period (80 of 139 firm-year observations, or 57.5%). As shown in Panel B, most sample observations are associated in the manufacturing (SIC Codes 2000/3000), wholesale/retail (SIC Code 5000) and service (SIC Code 7000) industries. Though firms in the wholesale/retail industry issue primarily cash-puts and service firms issue primarily share-puts, the total number of sample observations from these two SIC classifications only comprise 31% of total firm-year observations. None of the other industries show a strong preference for choosing cash or share-puts. We conclude that industry affiliation does not appear to provide a strong motivation for issuing cash or share-puts.

Table 2

Sample description

Variable	Full sample[a]	Cash-put firms[a]	Share-put firms[a]
Panel A: Period outstanding			
1991–1995	17	15	2
1996–2003	139	59	80
Panel B: SIC codes[b]			
1000's	4	0	4
2000's	44	24	20
3000's	42	19	23
4000's	7	5	2
5000's	21	18	3
6000's	6	2	4
7000's	30	5	25
8000's	2	1	1

[a]The sample consists 156 put-obligation firm years. 74 observations represent obligations related to cash-puts. 82 observations represent obligations related to share-puts

[b]Represent one-digit SIC Code Classifications. 1000's: Mining and construction. 2000's: Manufacturing: paper, chemical, and allied products. 3000's: Manufacturing: machinery and electronic equipment. 4000's: Transportation: communication, utilities. 5000's: Wholesale and retail trade. 6000's: Finance, insurance and real estate. 7000's: Services: business. 8000's: Services: health

5 Research design

We use a fixed-effects regression to exploit the time-series information in the data set by relating the variation in market capitalization firm "i" over the sample period in year "t" to any corresponding variations in the financial statement explanatory variables. We investigate whether puts are reflected in share prices of issuers using the following relation:

Model 1

$MV_{i,t}=\phi_0+\beta_1 BV_{i,t}+\beta_2 TS_{i,t}+\beta_3 LS_{i,t}+\beta_4 PUT_{i,t}+\alpha_i$

MV represents the share price at year-end. BV is the book value of the firm's assets at year-end. TS measures the amount of recorded year-end treasury stock and is included as an explanatory variable since prior research shows that firms which repurchase their own shares experience a permanent increase in stock price (Vermaelen *1981*; Ikenberry and Vermaelen *1996*). LS represents the book value of total liabilities (excluding contingent put obligations). PUT represents each firm's contingent put obligation. It is calculated as the product of the total number of put warrants outstanding at the balance sheet date multiplied by the strike price associated with each put (assuming physical delivery). This measurement treatment is found in SFAS 150 which states (p. 13): "[I]f either the amount to be paid or the settlement date varies based on specified conditions, those instruments shall be measured subsequently at the amount of cash that they would be paid under the conditions specified in the contract if settlement occurred at the reporting date." Similar to previous research, all variables are scaled by each firm's number of shares outstanding for each firm-year. Different forms of this model have been widely used in the accounting literature (i.e., Barth *1991*; Barth and McNichols *1994*; Henning et al. *2000*). Estimation of this model assumes that, for firms with only assets and liabilities in their capital structures, the book value amounts equal the amounts implicit in share prices and there are no omitted variables so that the coefficients for total assets (BV) and liabilities (LS) will equal one and minus one and the intercept will equal zero. Neither condition is likely to hold since accounting data are measured with error and omitted variables can result in estimated coefficients that differ from their theoretical values. Thus, we limit our formal predictions about the estimated coefficients to their signs. Consistent with Henning et al. (*2000*), BV and TS are predicted to have positive estimated coefficients while LS is expected to have a negative estimated coefficient. If all puts are valued as liabilities as SFAS 150 calls for, we predict that the sign of the estimated coefficient of PUT will be negative.

Next, we examine whether investors' differentially value cash and share-puts based on their potential solvency characteristics beyond the firm's recorded assets and liabilities using the following relation:

Model 2

$MV_{i,t}=\phi_0+\beta_1 BV_{i,t}+\beta_2 TS_{i,t}+\beta_3 LS_{i,t}+\beta_5 CPUT_{i,t}+\beta_6 SPUT_{i,t}+\alpha_i$

MV, BV, TS and LS are defined as before. CPUT and SPUT represent the contingent put obligations associated with cash and share-puts, respectively. CPUT is defined as the product of PUT and a dummy variable which equals 1 if the put is a cash-put and zero otherwise. SPUT is defined as the product of PUT and a dummy variable which equals 1 if the put contract is a share-put and zero otherwise. We predict that the estimated coefficient of CPUT will be negative if investors value cash-put obligations similarly to other balance sheet liabilities. We predict that the estimated coefficient of SPUT positive if investors believe that share-puts have the potential to increase firm solvency.

It is possible, however, that any result that we obtain in the previous test may be attributable to accounting rule rather than solvency considerations. Hopkins (*1996*) shows that analysts take certain attributes for granted when instruments are classified as either liabilities or equity on a firm's balance sheet. This suggests that the market's valuation of puts under the prior GAAP rules may have been influenced by the divergent accounting rules afforded to cash and share-puts. For example, investors were likely to value cash-puts as liabilities and share puts as equity based on their required classification under IAS 32 and EITF 96-13. While both prior capital structure and accounting research predict that investors will differentially value cash and share puts, a determination of whether their assessment is ultimately influenced by solvency or accounting considerations is an empirical issue. We test for this distinction using the following relation:

Model 3

$$MV_{i,t} = \phi 0 + \beta 1 BV_{i,t} + \beta 2 TS_{i,t} + \beta 3 LS_{i,t} + \beta 7 ICPUT_{i,t} + \beta 8 OCPUT_{i,t} + \beta 9 ISPUT_{i,t} + \beta 10 OSPUT_{i,t} + \alpha i$$

This model attempts to distinguish between these two explanations by examining whether the market's valuation of cash or share puts varies based on whether the financial instrument is "in" or "out" of-the-money at the balance sheet date. Again, MV, BV, TS and LS are defined as before. ICPUT and ISPUT represent cash (share) puts that are "in-the-money" at year-end. ICPUT (ISPUT) is defined as CPUT (SPUT) multiplied by a dummy variable that equals 1 if the puts are "in-the-money" as of the balance sheet date and zero otherwise. Finally, OCPUT and OSPUT represent cash (share) puts that are "out-the-money" at year-end. OCPUT (OSPUT) is defined as CPUT (SPUT) multiplied by a dummy variable that equals 1 if the puts are "out-of-the-money" as of the balance sheet date and zero otherwise. If investors value put obligations based on their accounting characteristics, they will continue to value cash-puts as liabilities (negatively) and share-puts as financing instruments that have the potential to increase firm solvency (positively). If, however, market participants base their valuation of put obligations on solvency considerations, they will only value "in-the-money" cash-puts as liabilities due to their expected negative future impact on firm solvency. We do not, however, expect that the market's valuation of share-puts to change since in either instance they have the potential to increase firm solvency regardless of whether they are exercised by put-holders or allowed to expire.

6 Empirical results

6.1 Descriptive statistics

Financial characteristics for the sample group are provided in Table 3, column 1. As shown in Panel A, put issuances are associated with firms that are in good financial condition (average current ratio is 2.00, debt ratio is 0.23 and z-score is 8.04). We also find that put issuers are profitable on a pre-tax basis (average pre-tax ROA is 15%) in the year of put issuance and have high explicit marginal tax rates (average effective tax rate is 39%). Consistent with the expectation that firms will issue puts in periods of rising share prices (Gibson et al. *2004*), the sample firms have significant market-to-book ratios averaging 9.59. We also find that most put issuers (154 of 156 firm-year observations or 50 sample firms) are engaged in significant stock repurchase programs with an average firm-year cumulative treasury stock ratio of 17% of total assets and a

current year stock repurchase ratio of 9% of total assets. Selling puts allowed issuers to collect, on average, $88 million of tax-free proceeds per firm, which allowed them to reduce the cost of their share repurchase program by 5.8% (Panel B). This created, however, a conditional firm-year put obligation averaging 6.9% of year-end total assets. If this obligation was to be settled entirely with cash (assuming physical delivery), it would consume approximately 68% of each firm's current year operating cash flows.

Table 3

Descriptive statistics

Variable	**Full sample[a]**	**Cash-put firms[a]**	**Share-put firms[a]**
Panel A: Firm characteristics			
Assets	$8,636	$7,498	$9,663
Current ratio	2.00	2.01	2.17
Debt ratio	0.23	0.26	0.19**
ROA	0.15	0.11	0.19**
Effective tax rate	0.39	0.37	0.39
Treasury stock ratio	0.17	0.10	0.23*
Repurchase ratio	0.09	0.06	0.13*
MV/BV	9.59	4.96	13.78**
Growth	0.21	0.21	0.22
Volatility	0.42	0.39	0.44
Z-Score	8.04	6.50	9.44**
Panel B: Put characteristics			
Put proceeds	$88	$66	$106
Put obligation ratio	0.07	0.03	0.10*
Put flexibility ratio	0.68	0.25	1.07*

*, **, *** Mean difference between amounts for cash and share put firms is significant at the 0.01, 0.05 and 0.10 level of significance, respectively. All tests are two-tailed

[a]The sample consists 156 put-obligation firm years. 74 firm-year observations represent firms that had outstanding cash-puts. 82 observations represent firms that had outstanding share-puts

Variable definitions: Assets: total assets at year-end (millions). Current ratio: current assets scaled by current liabilities. Debt ratio: sum of current plus long-term debt (excluding put obligations) scaled by total assets. ROA: pre-tax income scaled by average assets for the year. Effective tax rate: Tax expense (per books) scaled by pre-tax income. Treasury stock ratio: total treasury stock scaled by year-end assets. Repurchase ratio: cost of shares repurchased during the year scaled by year-end assets. Growth: Percentage change in total assets for the year. Volatility: Average volatility of common equity for the year. Z-Score: average z-score for each sample firm for the year. Put proceeds: total put proceeds received during the period that they sold put warrants to third parties (in millions). Put obligation ratio: Year-end contingent put obligation scaled by total assets. Put flexibility ratio: contingent put obligation scaled by operating cash flows for the year

Financial characteristics for the cash and share-put firm-year sub-samples are presented in columns 2 and 3. As shown in Panel A, we do not find a significant difference in the size of firms that issue cash or share puts. The average size of share-put firms (in terms of total assets) is $9,663 million as compared to $7,498 million for cash-put firms. This mean difference is not significant at the usual levels. Cash-put firms have higher debt ratios than share-put firms (0.26 vs. 0.19 of total assets). On the other hand, share-put firms are more profitable, have higher market-to-book ratios, and z-scores than cash-put firms.

We also show that share-put firms have larger share repurchase and put programs than cash-put firms. Share-put firms have higher average treasury stock ratios (23% to 10% of total assets) and current-year share repurchase ratios (13% to 6% of total assets) than cash-put firms. As shown in Panel B, share-put firms collected more cash proceeds from the sale of puts per firm than cash-put firms ($107 million vs. $66 million). This allowed them to reduce the cost of their current share repurchases by 7%, as opposed to only 4% for cash-put firms. The increased put activity causes share-put firms to have a significantly higher conditional put obligation exposure (averaging 10% of total assets) than cash-put firms (averaging 3% of total assets). However, when these obligations are considered along each firm's pre-existing debt obligations, the relative level of overall liability exposure (debt plus conditional put obligations) of cash and share-put firms is virtually identical. This suggests that cash-put issuers may have been precluded from selling more puts because of debt capacity constraints. Finally, share-put firms would face tighter cash constraints than cash-put firms if the entire conditional put obligation were to be settled with cash (using physical delivery). This is because their current year conditional put obligation to operating cash flow ratio is significantly higher than the similar ratio for cash-put firms (1.07 vs. 0.25). This latter result suggests that share-put firms may have used the share-settlement feature to provide themselves payment flexibility in the event that future cash flows were not sufficient to pay put obligations at the settlement date.

6.2 Valuation model test results

The fixed-effects valuation regression results are presented in Table 4. The results for Model 1 are presented in Column 2. The model's overall R^2 is 0.13 ("within" R^2 within is 0.17 and "between" R^2 is 0.08). Consistent with expectations, the signs of the estimated coefficients on BV and LS are

in the predicted directions and significant at the 0.01 level (one-tailed). On the other hand, the estimated coefficient of TS is not significant at the usual levels. We also find a positive association between each firm's put warrant obligation and its market value since the estimated coefficient of PUT is positive and significant at the 0.10 level (two-tailed). This finding is opposite to what we expect if investors value all put warrants as liabilities, consistent with the accounting called for in SFAS 150.

Table 4

Between-firm tests for sample of 156 firm-years using fixed-effect regression.

Model 1: $MV_{i,t}=\phi 0+\beta 1BV_{i,t}+\beta 2TS_{i,t}+\beta 3LS_{i,t}+\beta 4PUT_{i,t}+\alpha i$

Model 2: $MV_{i,t}=\phi 0+\beta 1BV_{i,t}+\beta 2TS_{i,t}+\beta 3LS_{i,t}+\beta 5CPUT_{i,t}+\beta 6SPUT_{i,t}+\alpha i$

Model 3:
$MV_{i,t}=\phi 0+\beta 1BV_{i,t}+\beta 2TS_{i,t}+\beta 3LS_{i,t}+\beta 7ICPUT_{i,t}+\beta 8OCPUT_{i,t}+\beta 9ISPUT_{i,t}+\beta 10OSPUT_{i,t}+\alpha i$

Variable	**Model 1**		**Model 2**		**Model 3**	
	Est. Coef.	**SE**	**Est. Coef.**	**SE**	**Est. Coef.**	**SE**
N = 156						
Intercept	11.74	4.34*	13.52	4.41*	12.12	4.49*
BV	1.81	0.51*	1.79	0.51*	1.85	0.51*
TS	0.42	0.35	0.41	0.34	0.41	0.35
LS	−1.59	0.64*	−1.53	0.63*	−1.55	0.62*
PUT	3.93	2.27***				
CPUT			−15.09	10.76***		
SPUT			4.12	2.25**		
ICPUT					−16.95	12.25***
OCPUT					−12.25	12.09
ISPUT					3.06	2.33***
OSPUT					9.41	4.03*

Variable	Model 1		Model 2		Model 3	
	Est. Coef.	**SE**	**Est. Coef.**	**SE**	**Est. Coef.**	**SE**
R^2 within	0.17		0.19		0.21	
R^2 between	0.08		0.13		0.13	
R^2 overall	0.13		0.16		0.17	

*, **, *** Significant at the 0.01, 0.05, 0.10 levels, respectively. All tests are one tailed

MV represents the year-end market value of common equity. BV represents total year-end assets. TS is defined as total treasury stock at year-end. LS is defined as total liabilities at year-end (excluding put obligations). PUT represents the contingent put obligations at year-end (assuming physical delivery). CPUT represents the contingent put obligation associated with cash-puts at year-end (assuming physical delivery). SPUT represents the contingent put obligation associated with share-puts at year-end. ICPUT represents CPUT times a dummy variable that equals 1 if the put warrant is "in-the-money" at year end and zero otherwise. OCPUT represents CPUT times a dummy variable that equals one if put is "out-of-the-money" at year end and zero otherwise. ISPUT represents SPUT times a dummy variable that equals 1 if the put warrant is "in-the-money" at year end and zero otherwise. OSPUT represents SPUT times a dummy variable that equals one if put is "out-of-the-money" at year end and zero otherwise. Amounts for MV, BV, TS, LS, PUT, CPUT, SPUT, ICPUT, OCPUT, ISPUT and OSPUT are scaled by total common shares outstanding at year-end

We examine whether investors distinguished between the differential effects that cash and share-puts have on firm value by separating the conditional put obligations between cash and share-puts (Model 2). The model's overall R^2 increases to 0.16 ("within" R^2 is 0.19 and "between" R^2 is 0.13). Consistent with the results of Model 1, the signs of the estimated coefficients of *BV* and *LS* are as predicted and significant. Consistent with H1A, we show that investors differentially value cash and share-put obligations. Similar to other liabilities, the sign of the estimated coefficient of *CPUT* is negative and significant at the 0.05-level (one-tailed). On the other hand, the sign of the estimated coefficient of SPUT is positive and significant at the 0.10-level (one-tailed). We test whether these results are driven by accounting rule or solvency considerations in Model 3. Again, the model's overall R^2 increases slightly to 0.17 ("within" R^2 within is 0.21 and "between" R^2 is 0.13). As expected, investors continue to value "in-the-money" puts as liabilities that will negatively impact firm solvency as the sign of the estimated coefficient of ICPUT is negative and significant at the 0.10 level (one-tailed). On the other hand, investors no longer value "out-of'-money" puts as financial instruments that have the potential to negatively impact firm value (as liabilities) as the estimated coefficient of OCPUT is no longer significant at the usual levels. This result suggests that market participants' value cash-puts based on their potential effects on firm solvency rather than the fact that they are classified as balance sheet obligations. In contrast, the signs of the estimated coefficients of ISPUT and OPSPUT are both positive and significant at the 0.10 and 0.01 levels of significance, respectively. This finding suggests that investors believe that

share-puts have the potential to incrementally increase firm solvency regardless of whether they are allowed to expire worthless or settled by the issuer with a their own common equity.

6.3 Correlations

One concern about the interpretation of our results is that they may be unstable due to high correlations between the explanatory variables. To address this issue we present correlation coefficients for all three explanatory variables for each fixed regression model in Table 5. As expected, we find that BV and LS are highly correlated in each model (Panel B). TS is weakly correlated with both BS and LS. We re-run our fixed-effect regressions excluding TS from each model (1, 2 and 3) without a significant change in results. We do not find significant correlations between any of the other explanatory variable in each of our regression models.

Table 5

Correlation coefficients.

Model 1: $MV_{i,t}=\phi 0+\beta 1BV_{i,t}+\beta 2TS_{i,t}+\beta 3LS_{i,t}+\beta 4PUT_{i,t}+\alpha i$

Model 2: $MV_{i,t}=\phi 0+\beta 1BV_{i,t}+\beta 2TS_{i,t}+\beta 3LS_{i,t}+\beta 5CPUT_{i,t}+\beta 6SPUT_{i,t}+\alpha i$

Model 3:
$MV_{i,t}=\phi 0+\beta 1BV_{i,t}+\beta 2TS_{i,t}+\beta 3LS_{i,t}+\beta 7ICPUT_{i,t}+\beta 8OCPUT_{i,t}+\beta 9ISPUT_{i,t}+\beta 10OSPUT_{i,t}+\alpha i$

Panel A: Model 1							
	BV	TS	LS	PUT			
BV	1.00						
TS	0.30	1.00					
LS	0.97	0.36	1.00				
PUT	−0.07	0.07	−0.07	1.00			
Panel B: Model 2							
	BV	TS	LS	CPUT	SPUT		
BV	1.00						
TS	0.30	1.00					
LS	0.97	0.36	1.00				
CPUT	0.21	0.13	0.16	1.00			
SPUT	−0.16	0.02	−0.14	−0.27	1.00		
Panel C: Model 3							
	BV	TS	LS	ICPUT	OCPUT	ISPUT	OSPUT
BV	1.00						
TS	0.30	1.00					
LS	0.97	0.36	1.00				
ICPUT	0.18	0.18	0.14	1.00			
OCPUT	0.10	−0.06	0.07	−0.12	1.00		
OSPUT	−0.13	−0.08	−0.14	−0.12	0.14	1.00	
OSPUT	−0.07	0.17	−0.02	0.12	−0.13	−0.14	1.00

Explanatory variable definitions: BV represents total year-end assets. TS is defined as total treasury stock at year-end. LS is defined as total liabilities at year-end (excluding put obligations). PUT represents the contingent put obligation at year-end (assuming physical delivery). CPUT represents the contingent put obligation associated with cash-puts at year-end (assuming physical delivery). SPUT represents the contingent put obligation associated with share-puts at year-end. ICPUT represents CPUT times a dummy variable that equals 1 if the put warrant is "in-the-money" at year end and zero otherwise. OCPUT represents CPUT times a dummy variable that equals one if put is "out-of-the-money" at year end and zero otherwise. ISPUT represents SPUT times a dummy variable that equals 1 if the put warrant is "in-the-money" at year end and zero otherwise. OSPUT represents *SPUT* times a dummy variable that equals one if put is "out-of-the-money" at year end and zero otherwise. Amounts for BV, TS, LS, PUT, CPUT, SPUT, ICPUT, OCPUT, ISPUT and OSPUT are scaled by total common shares outstanding at year-end

7 Conclusions

Prior research suggests firms issued puts either to signal favorable private information about future earnings prospects to outside investors (Gibson et al. *2004*) or to reduce financing costs (Gibson and Singh *2005*). Atanasov et al. (*2004*) assert that financial intermediaries purchase puts in order to gain valuable private information about the issuer's future operating performance in order to trade on this information and generate additional profits. Conditional on the decision to issue puts, this paper extends prior research by examining whether an investor's valuation of cash and share-puts was impacted by their potential differential impact of firm solvency and equity valuation. We find that market participants' value cash and share-puts differentially beyond the firms recorded assets and liabilities. We also show that this result is due to the solvency distinctions rather than accounting rule differences between cash and share-puts. Our results suggest that dual purpose financing instruments (such as cash and share-puts) be reported separately from each other on a firm's balance sheet, consistent with the AAA Committee position.

Put warrants were just one type of multiple component financing instrument that is covered by SFAS 150. These include (but are not limited to) mandatory redeemable stock and other obligations to repurchase stock, such as forward purchase agreements. Future research should consider examining the impact of SFAS 150 on the firm's choice and investors' valuation of these dual purpose financing instruments.

Appendix A

Firms issuing puts also included discussions of their put programs in the footnotes to their financial statements. While the type of information disclosed varied greatly across firms, most put issuers disclosed the time period that they began selling puts and the put settlement terms. In addition, share-put issuers either disclosed their put obligation amount or the necessary information required to allow the reader to independently determine this item (since cash-put issuers were required to show their conditional put obligation as a balance sheet obligation they did not always disclose this item in their footnotes). In many cases both cash and share-put issuers also included the following additional information in their footnotes: number of put warrants issued and put proceeds received, put warrant vesting period, put warrant strike price (or average strike price if

more than one set of put warrants had been issued), number of puts outstanding at year-end, whether the outstanding puts were "in" or "out-of-the money" at year-end, and the put warrant activity for the year (puts sold, exercised, net-cash settled, net-share settled, expired). These additional disclosures, however, were not uniform across firms. In all cases, however, share-put issuers either disclosed their put obligation amount or the necessary information required to allow the reader to independently determine this item (since cash-put issuers were required to show their conditional put obligation as a balance sheet obligation they did not always disclose this item in their footnotes).

In this Appendix, we include two sample put warrant footnote disclosures. The first is from the 1997 financial statements of Symbol Technologies (cash-put issuer). The second is from the 2000 financial statements of Pall Corporation (share-put issuer). Each is shown below:

Cash-put issuer-sample footnote disclosure no. 1

Symbol Technologies (1997 Financial Statements (for the years ending December 31, 1997, 1996 and 1995); Discussion included the "Common Stock" footnote and included in the sub-section entitled "Common Equity Put Options"):

During April 1997 the Company issued common equity put options on 150,000 shares of its common stock which are exercisable for a period of one year from the date of issuance and give independent parties the right to sell such shares to the Company at a strike price of $31.163 per share. Proceeds of $285,000 from the issuance of the April 1997, put options were credited to additional paid in capital.

The balance of the common equity put option account as of December 31, 1997 and December 31, 1996, represents the amount the Company would be obligated to pay if all unexpired put options were exercised relating to unexpired transactions outstanding as of the respective balance sheet dates. The decrease in the balance as of December 31, 1997 from December 31, 1996 is due to the expiration of obligations associated with 70,500 shares and 375,000 shares, respectively of the Company's common stock at strike prices of $26.703 and $24.421, respectively, and corresponding reclassification to additional paid in capital, partially offset by the April issuance previously described.

Share-put issuer-sample footnote disclosure no. 2

Pall Corporation (2000 Financial Statements (for the fiscal years ending July 29, 2000, July 31, 1999 and August 1, 1998); Discussion included as a part of the "Common Stock" footnote and included in the sub-section entitled: "Share Repurchases"):

In connection with the Company's stock repurchase program, approximately 1,360 put options with strike prices ranging from $21.40 to $22.75 were sold under three separate contracts with an independent third party during fiscal 2000. The contracts grant the purchaser the right to sell shares of Pall Corporation stock to the Company at specified future dates and prices. In the event the puts are exercised, the contracts allow the Company to determine whether to settle in cash or shares. As such, the contracts are considered equity instruments and changes in fair value are not recognized in the Company's financial statements. The premiums received of $2,049 were

recorded as additions to capital in excess of par value. Contracts related to approximately 920 put options expired in fiscal 2000 unexercised. At July 29, 2000, one contract for approximately 440 put options, with a strike price of $22.75 and expiration date of September 25, 2000, is outstanding.

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Footnotes

SFAS 150 is effective for financial instruments entered into or modified after May 31, 2004 and otherwise is effective at the beginning of the first interim period of any issuer after June 15, 2004.

Cash-puts were first classified as liabilities by the FASB in Emerging Issues Task Force Number 88–9 ("EITF 88-9") *Put Warrants* (FASB *1988*). See also Accounting Series Release Number 268 (SEC *1979*). The accounting treatment for share-puts was first addressed by the IASB in *1996* with the issuance of International Accounting Standard 32 ("IAS 32"): *Financial Instruments: Disclosure and Presentation* (IASB *1996*). Consistent with IAS 32, the FASB classified share-puts as equity instruments through the issuance of Emerging Issues Task Force Number 96-13 ("EITF 96-13"): *Accounting for Derivative Financial Instruments Indexed to, and Potentially Settled In, a Company's Own Stock* (FASB *1996*). Final consensus regarding the proper accounting treatment for cash and share puts was reached by the FASB in November, *2000* through the issuance of Emerging Issues Task Force Number 00-19 ("EITF 00-19"): *Accounting for Derivative Financial Instruments Indexed to, and Potentially Settled by a Company's Own Stock*) which confirmed the prior classification scheme of cash-puts as liabilities and share-puts as equity (FASB *2000*).

Most issuers recorded contingent cash-put obligations in the mezzanine section of their balance sheet. In contrast, share-put issuers disclosed their contingent put obligation in the footnotes to their financial statements. See Appendix A for a further discussion of put warrant footnote disclosures provided by pre-SFAS 150 cash and share-put issuers.

Penman (*2003*) indicates that an expense arises when the firm's stock price falls, giving rise to the "contingent liability." SFAS 150 does not recommend booking this expense.

The first milestone draft to SFAS 150 *Summary and Background of Milestone Draft* developed principles for classifying single-component instruments based on the Ownership-Settlement Approach (FASB *2003b*). It was presented in a format similar to that of an Exposure Draft. However, it does not address all of the matters that would be expected to be addressed in an Exposure Draft, such as multiple-component instruments, earnings per share, disclosure, transition and effective date. These matters are to be addressed in the Second Milestone Draft.

This favorable ruling is contained in an SEC No-Action Letter dated February 22, 1991 (SEC *1991*).

The tax treatment of puts is governed under IRC Section 1032 which requires firms to exclude put sale proceeds from gross income for income tax purposes.

This assumes that −LOSSCASH is greater than +A. If the incremental loss amount is less, then the firm will experience a small increase to firm solvency. Assuming that the firm repurchases its common equity from a third party in accordance with a previously announced share repurchase program, the overall impact to firm solvency is the same as Case II (−LOSSCASH-FMV+A (Case III) = −S+A (Case II)).

In addition, in 2003 the IASB amended IAS 32 to be consistent with SFAS 150 and currently requires issuers to account for share-puts as liabilities. See paragraphs 11(b)(ii), and 21 of IAS 32 (IASB *2003*).

See, for example, Myers (*1977*) and Warner (*1977*).

The NAARS and MERGENT databases are used as the primary sources for our search for two reasons. First, they contain a large set of publicly traded companies including those traded on the New York, American, and OTC stock exchanges. Second, they include firms involved in cash and exchange offerings as well as public offerings and private placements. We use the NAARS database as a source since it includes public filings through 1994. We use the MERGENT database as our source to select post-1994 put issuances since it includes public filings from 1995 to the current date.

Most put contracts had vesting periods ranging from 3 months to 1 year.

Twenty-five of the thirty-seven put issuers had puts outstanding between two and four years. Twelve firms had puts outstanding for periods ranging from 5 to 9 years.

These statistics are based on the information provided by 44 firms. Eight firms did not provide put proceed information in their financial statements.

This benefit may come at a cost, however. Share-puts may carry an implicit cost either in the form of a lower sales price or higher common equity strike price in order to gain investor

acceptance of the net-share settlement feature. This may partially explain why firms with less significant put programs issued cash rather than share-puts.

Since cash puts are required to be valued as balance sheet liabilities in the pre-SFAS 150 period, our results provide the surprising finding that investors are able to “see through” the required liability accounting for these out of the money cash puts and not value them as liabilities when the puts do not affect company solvency.